Remarks

Reconsideration of the application and allowance of all pending claims are respectfully requested. Claims 50-57 and 59-92 remain pending. **Applicants respectfully request that these remarks be carefully considered by the Examiner.**

In the Office Action, dated October 19, 2005, restriction to one of the following inventions is required under 35 U.S.C. 121:

> I. Claims 50-62 and 66-89 drawn to Distributed Data Processing, classified in class 709, subclass 201.

> II. Claims 63-65 and 90-92 drawn to Error Detection/Correction of Networks, classified in class 714, subclass 4.

Responsive to this Restriction Requirement, applicants elect Group I, claims 50-62 and claims 66-89, to be prosecuted at this time. However, applicants make this election with traverse and respectfully request, based on the remarks below, that all claims pending herein continue to be prosecuted together.

Applicants respectfully submit that the restriction requirement is improper. A proper restriction requires that there be a burden on the Patent Office to examine the claims together. If there is no burden, the restriction, regardless of the content of the claims, is not proper. (See M.P.E.P. §803.) In this case, a burden upon the Office is indicated because the claims of the inventions are classified in different classes/subclasses. However, applicants respectfully submit that the subject matter recited in Group II is closely related to that recited in the claims of Group I, since both groups are directed to managing processing groups. Thus, a complete search of Group I should entail examination of the other referenced class and subclass.

Further, applicants respectfully submit that the substance of these claims have already been searched together in the past three Office Actions. For instance, previously presented claims 26 and 34 have already been considered by the Examiner. A restriction at this point in the prosecution is untimely at best. For at least these reasons, applicants respectfully request that the claims of Group II be considered along with the claims of Group I.

Based on the foregoing, and in particular, because of the closeness of the subject matter, and the probable overlapping searches, applicants respectfully submit that there would be no additional burden on the Examiner to examine the Group II claims, claims 63-65 and 90-92 in one application with the Group I claims, claims 50-62 and 66-89. Accordingly, applicants request reconsideration and withdrawal of the outstanding restriction requirement.

In addition to the above, claims 50-57, 66-73 and 78-85 are rejected under 35 U.S.C. 102(e) as being anticipated by Moiin et al. (U.S. 5,999,712); and claims 59-62, 74-77 and 86-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moiin et al. in view of Gamache et al. (U.S. Patent No. 6,401,120). Applicants respectfully, but most strenuously, traverse these rejections for the reasons herein.

Applicants' invention is directed to managing processing groups of a distributed computing environment. In one aspect, applicants' invention is directed to a protocol used to join a prospective member to a processing group. As one example, the protocol is used to join a prospective member to an active processing group. The join protocol includes various steps taken to ensure configuration consistency. Specifically, a sequence number is used throughout the join protocol to control whether a prospective member joins the group and to ensure configuration consistency.

As one particular example, applicants claim a method of managing processing groups of a distributed computing environment (e.g., independent claim 50). The method includes, for instance, requesting via a request by a prospective member to join a processing group of the distributed computing environment, the request including a sequence number indicating a version of the processing group; determining whether the prospective member can join the processing group, the determining employing the sequence number; and joining the processing group by the prospective member, in response to at least in part to the determining indicating that the prospective member can join the processing group. Thus, in this aspect of applicants' claimed invention, a prospective member requests to join a processing group and that request includes a sequence number indicating a version of the processing group. The sequence number is used in determining whether the prospective member can join the processing group. This is very different from the teachings of Moiin.

While applicants agree that both Moiin and applicants' claimed invention have a join membership protocol and that Moiin uses sequence numbers, applicants' use of sequence numbers is very different from that of Moiin. Thus, applicants' claimed invention is not described, taught or suggested by Moiin.

For example, applicants' claim recites determining whether the prospective member can join the processing group, the determining employing the sequence number. In this aspect of applicants' claimed invention, a sequence number is used to determine whether the join can proceed. There is no description in Moiin of the join being dependent on a sequence number. While in Moiin a sequence number is used, the sequence number is used for a different purpose. For example, in Moiin the sequence number is used to determine which messages are to be processed. This is clearly supported in Moiin. For instance, Col. 7, lines 26-36, specifically recite: "We also assume that only messages with higher or equal sequence numbers to a node's own sequence number are processed..." (Col. 7, lines 29-30). The sequence number in Moiin is used to determine which messages are to be processed, and is not used to determine whether a node is to join a processing group.

Instead of using a sequence number to determine whether a node can join the processing group, as claimed by applicants, the join protocol of Moiin specifically states that each node proposes a membership. The optimum membership is then selected from the proposed set of memberships. This is how a join is accomplished in Moiin. There is no description in Moiin of using the sequence number to determine if the join is to occur, as claimed by applicants. Thus, applicants respectfully submit that Moiin does not anticipate applicants' claimed invention.

Since Moiin does not describe, teach or suggest using a sequence number to determine whether a prospective member can join a processing group, as explicitly claimed by applicants, applicants respectfully submit that independent claim 50 and similar independent claims are patentable over Moiin.

The dependent claims are patentable for the same reasons as the independent claims, as well as for their own additional features. For example, in dependent claim 53, it specifically states that the determining whether a prospective member can join the processing

group includes comparing by the prospective member the sequence number in the request with the current group sequence number to determine if the join should continue. Again, applicants respectfully submit that the sequence number of Moiin is not used in the same sense that the sequence number is used in applicants' claimed invention. Specifically, Moiin does not teach comparing by the prospective member the sequence number in the request with the current group sequence number to determine if the join should continue. Again, in Moiin, the sequence number is just used to determine which messages are to be processed, and is not used to determine whether the join can continue. Thus, applicants respectfully submit that dependent claim 53 and similar dependent claims are patentable over Moiin.

For all of the above reasons, applicants respectfully submit that claims 50-57, 66-73 and 78-85 are patentable over Moiin. Further, applicants respectfully submit that claims 59-62, 74-77 and 86-89 are patentable over the combination of Moiin and Gamache.

As explicitly admitted in the Office Action, Moiin does not teach the setting of the sequence number of the processing group, in response to the determining indicating whether a quorum of members has joined the processing group, as recited in applicants' independent claim 59. Thus, Gamache is relied upon. However, Gamache does not overcome the deficiencies of Moiin.

While Gamache mentions quorum and sequence numbers, Gamache does not describe, teach or suggest what is explicitly recited in applicants' claimed invention. For example, Gamache does not describe, teach or suggest the setting of a sequence number of a processing group, in response to the determining indicating a quorum of members has joined the processing group. Instead, in Gamache, the quorum represents whether enough replicated storage devices are available to a cluster, rather than whether there are a certain number of members of a cluster being formed.

Further, in Gamache, the sequence number merely indicates which is the most up-to-date replica in the quorum of replicas. There is no teaching or suggestion of setting a sequence number, in response to the determining indicating a quorum of members has joined the processing group. Since this is not taught, described or suggested in Gamache, and since it is explicitly admitted that Moiin does not teach or suggest this aspect of applicants'

claimed invention, applicants respectfully submit that the combination of Moiin and Gamache fails to describe, teach or suggest at least this aspect of applicants' claimed invention.

Moreover, applicants respectfully submit that the combination of Moiin and Gamache is improper. For example, there is no teaching or suggestion in the references themselves to make the combination or modification suggested in the Office Action. It is well known that:

> It is insufficient to establish obviousness that the separate elements of the invention existed in the prior art; absent some teaching or suggestion, in the prior art, to combine the elements. <u>Arkie Loures Inc. v. Gene Lareau Tackle Inc., 43 USPQ 2d 1294, 1297 (Fed. Circ. 1997)</u>

Justification for the combination is stated in the Office Action, as follows:

> It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Gamache within the system of Moiin by implementing setting the sequence number of the processing group in response to the determining indicating a quorum within the method of managing processing groups of a distributed computing environment because Moiin teaches of dynamically changing quorum (see col. 5, lines 51-54 and col. 6, lines 1-11), therefore since Moiin teaches that the sequence number is dependent on the various reconfigurations (see col. 6, lines 40-41), changes in quorum would result in changes in the sequence number.

Again, applicants respectfully submit that the above justification does not indicate where the references expressly teach the combination. There is no teaching in the justification or in Gamache of setting a sequence number of a processing group, in response to the determining indicating whether a quorum of members has joined the processing group, as claimed by applicants. Further, Moiin fails to teach this claimed element.

Based on the foregoing, applicants respectfully submit that the combination of Moiin and Gamache is improper, and even if proper, the combination does not teach or suggest one or more of applicants' claimed elements Thus, applicants respectfully submit that claim 59 and similar independent claims are patentable over the combination of Moiin and Gamache.

Further, the dependent claims are patentable for the same reasons as the independent claims, as well as for their own additional features.

For all of the above reasons, applicants respectfully submit that their invention is patentable over Moiin and Gamache, either alone or in combination. Thus, applicants respectfully request an indication of allowability for all pending claims.

Should the Examiner wish to discuss this case with applicants' attorney, please contact applicants' attorney at the below listed number.

Respectfully submitted,

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